QUEUES AT CRITICAL INTERSECTIONS

The Study Team collected information on existing queues at critical intersections in the study area. This information was needed to adequately develop a computerized model of existing traffic conditions. The Study Team took samples of maximum queues for each of the approaches of critical intersections. The Study Team calculated the average of the maximum queues for each of the approaches. Figure 15 summarizes the average of the observed maximum queues for the critical intersections. The intersections with the longest queues are at the entry points to the study area. The longest queues were observed on Chain Bridge during the AM peak hours. Canal Road at Foxhall Road is another location with extremely long queues during the AM peak hours. The queues on Whitehurst Freeway were the longest observed queues during the PM peak hours.
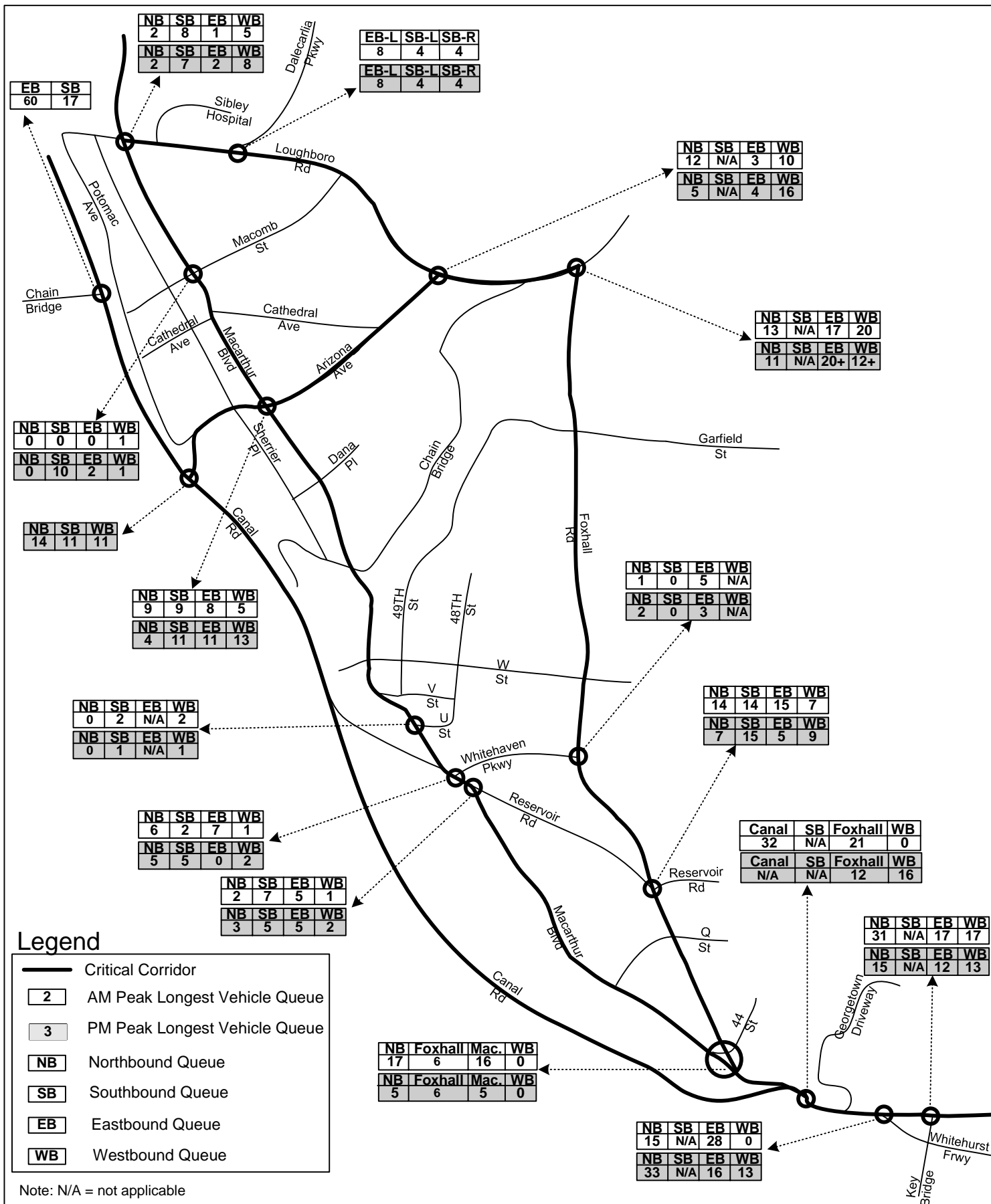
The Study Team used the queue information to develop the traffic model. The results of the traffic simulations were compared to the observed queues. Where the Study Team found significant discrepancies between modeled conditions and observed conditions, the input data used to set up the model was thoroughly examined to eliminate the possibility of errors in the development of the model. After errors were ruled out, discrepancies were reconciled by making adjustments to the traffic model parameters to make the model replicate more accurately observed traffic conditions.
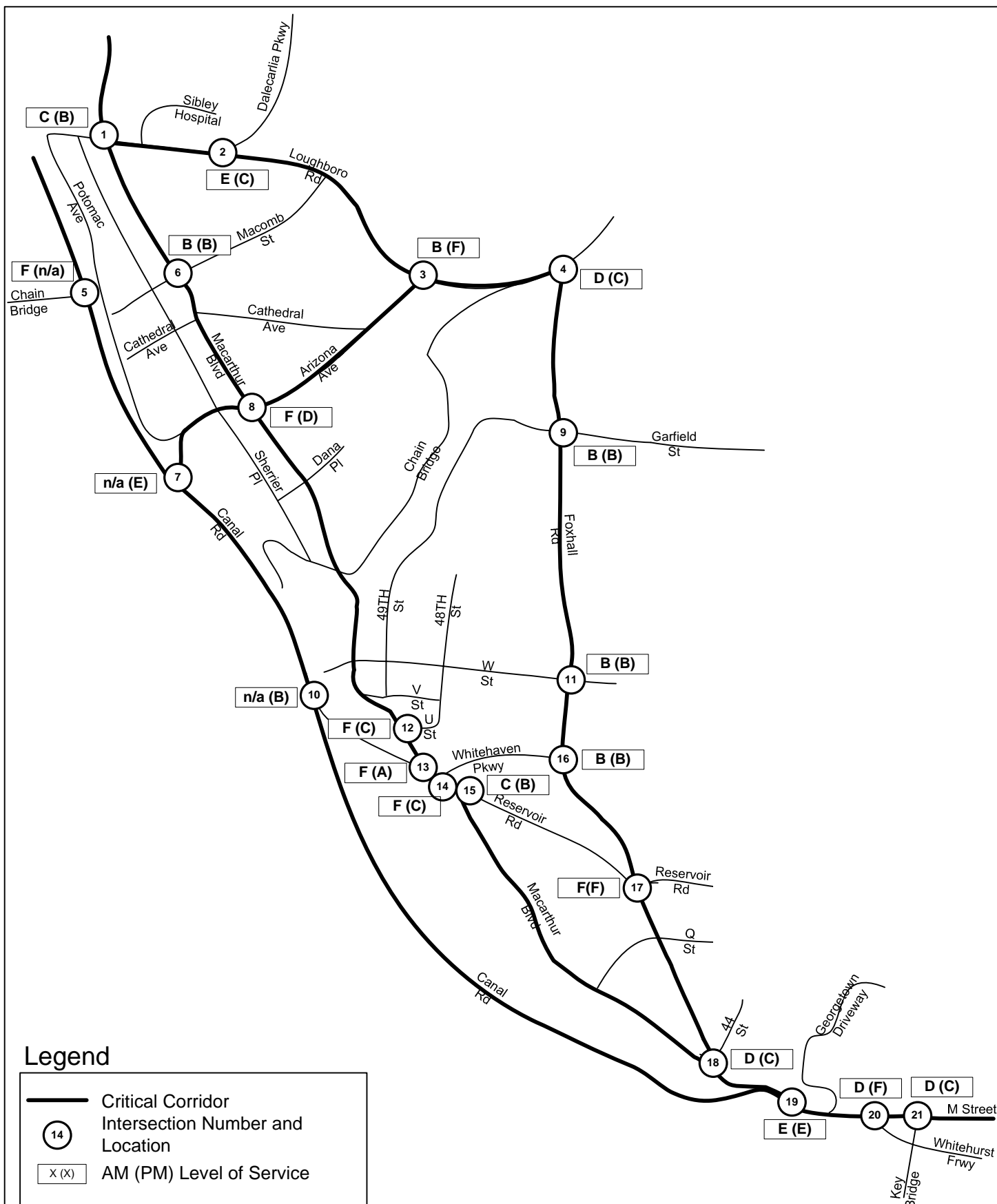
EXISTING LEVELS OF SERVICE

The Consultant used SYNCHRO, a traffic modeling/analysis program, to evaluate existing traffic conditions at the Critical intersections in the study area. For the evaluation, the Consultant entered existing traffic volumes, lane configurations and timings into SYNCHRO to develop a base case, existing conditions model. SimTraffic, SYNCHRO's associated traffic simulation software, was used to assist in the development of a model that replicates accurately existing conditions.

The Consultant used the SimTraffic software results to calculate levels of service (LOS) and the delay per vehicle for all the critical intersections in the study area. The LOS evaluation uses a six-letter grade scale (A to F) to rank the overall traffic handling ability of an intersection or a network.   LOS A indicates excellent traffic operations with minimal delays.   LOS F represents failing conditions with long delays.   Levels of service E and F are generally considered undesirable. Appendix F provides a description of the different levels of service and their associated delays for both signalized and unsignalized intersections.

Figure 16 shows existing levels of service for the network for the AM and PM peak hours. It can be seen that in general levels of service are worse during the AM peak hour than the PM peak hour. This is due in part to the concentrated nature of the AM rush hour versus the PM rush hour and the traffic activity associated with schools in the study area. Additionally, the entry points to the study area have the worst levels of service. In particular, the intersection of Foxhall and Reservoir Roads operates at LOS F during both peak periods.

NB	SB	EB	WB
2	8	1	5

NB	SB	EB	WB
2	7	2	8

EB-L	SB-L	SB-R
8	4	4

EB-L	SB-L	SB-R
8	4	4

EB	SB
60	17

Dalecarlia Pkwy

Sibley Hospital

Loughboro Rd

NB	SB	EB	WB
12	N/A	3	10

NB	SB	EB	WB
5	N/A	4	16

Macomb St

Potomac Ave

Chain Bridge

Cathedral Ave

Cathedral Ave

Macarthur Blvd

Arizona Ave

NB	SB	EB	WB
13	N/A	17	20

NB	SB	EB	WB
11	N/A	20+	12+

NB	SB	EB	WB
0	0	0	1

NB	SB	EB	WB
0	10	2	1

Sherrier Pl

Dana Pl

Chain Bridge

Garfield St

Foxhall Rd

NB	SB	WB
14	11	11

Canal Rd

NB	SB	EB	WB
9	9	8	5

NB	SB	EB	WB
4	11	11	13

49TH St

48TH St

W St

NB	SB	EB	WB
1	0	5	N/A

NB	SB	EB	WB
2	0	3	N/A

NB	SB	EB	WB
0	2	N/A	2

NB	SB	EB	WB
0	1	N/A	1

V St

U St

Whitehaven Pkwy

NB	SB	EB	WB
14	14	15	7

NB	SB	EB	WB
7	15	5	9

NB	SB	EB	WB
6	2	7	1

NB	SB	EB	WB
5	5	0	2

Reservoir Rd

NB	SB	EB	WB
2	7	5	1

NB	SB	EB	WB
3	5	5	2

Reservoir Rd

Canal	SB	Foxhall	WB
32	N/A	21	0

Canal	SB	Foxhall	WB
N/A	N/A	12	16

Macarthur Blvd

Q St

NB	SB	EB	WB
31	N/A	17	17

NB	SB	EB	WB
15	N/A	12	13

Canal Rd

44 St

Georgetown Driveway

Legend

▬▬▬	Critical Corridor
2	AM Peak Longest Vehicle Queue
3	PM Peak Longest Vehicle Queue
NB	Northbound Queue
SB	Southbound Queue
EB	Eastbound Queue
WB	Westbound Queue

Note: N/A = not applicable

NB	Foxhall	Mac.	WB
17	6	16	0

NB	Foxhall	Mac.	WB
5	6	5	0

Whitehurst Frwy

Key Bridge

NB	SB	EB	WB
15	N/A	28	0

NB	SB	EB	WB
33	N/A	16	13

Not to Scale		Palisades Traffic	Observed Queues at	FIGURE
August, 2002	N	Impact Study	Critical Intersections	15

Existing Levels of Service (LOS)

Palisades Traffic Impact Study

FIGURE 16

Not to Scale

August, 2002

Legend

— Critical Corridor

(14) Intersection Number and Location

X (X) AM (PM) Level of Service

Some of the intersections, such as Canal Road and Chain Bridge and Canal Road and Whitehurst Freeway, operate at poor levels of service due to high existing volumes, while others, such as Reservoir Road and Foxhall Road, operate at a poor LOS due in part to non-optimized signal timings.

Another location with poor levels of service is the intersection of Foxhall and Canal Road. This intersection is operating at poor level of service largely due to the major arterials of Foxhall Road and MacArthur Boulevard converging and then joining with Canal Road. Essentially, five lanes of traffic converge into two, over a very short distance during the AM peak hour, creating high delays and poor levels of service.

With regards to unsignalized intersections, those performing at the worst LOS include Arizona Avenue and Loughboro Road (PM peak), MacArthur Boulevard and Whitehaven Parkway (AM peak) and Loughboro Road and Dalecarlia Parkway (AM peak).

The Consultant used the existing levels of service to identify locations where future improvements - such as signalization, changes in signal timing/phasing and additional lanes – could be implemented. The recommendations with respect to changes to signal timings and signalization are described in the Issues and Recommended Improvements section of this report.